

# PATENT ABSTRACTS OF JAPAN

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## (54) PRODUCTION OF REINFORCED POLYBUTADIENE RUBBER

### (57)Abstract:

PURPOSE: To obtain efficiently the titled rubber with excellent physical properties, by subjecting 1,3-butadiene and a mixture of an inert organic solvent and a small amount of CS<sub>2</sub> to a 1,4-polymerization reaction in the presence of a cis- 1,4-polymerization catalyst and subjecting the mixture to a 1,2-polymerization reaction after the addition of a specified 1,2-polymerization catalyst.

CONSTITUTION: 1,3-Butadiene is mixed with an inert organic solvent and a small amount of CS<sub>2</sub>. The mixture is further mixed with an organoaluminum compound of formula  $R_n X_3 - n$ , wherein R is a 1W6C alkyl or a like group, X is a halogen and n is 1.5W2, and a cobalt compound which serve as a cis-1,4-polymerization catalyst, and subjected to a 1,4-polymerization reaction. After the addition of an organoaluminum compound (as a 1,2-polymerization catalyst) of formula  $R_2 R_3$ , the reaction mixture is subjected to a 1,2-polymerization reaction to form the purpose polybutadiene rubber consisting of 5W30wt% boiling n-hexane-insoluble portion and 95W70wt% soluble portion. Then, the unreacted 1,3-

butadiene, inert organic solvent and carbon disulfide are distilled, recovered and recirculated.